

Climatological Data for June, 1910.
DISTRICT No. 9, COLORADO VALLEY,
FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

Low pressure and a practically stagnant atmosphere exerted the controlling influence on the weather conditions of the month, and the hot, dry weather, characteristic of June, prevailed scarcely without interruption. Except in a few localities, temperatures were above the normal during the first 12 days, with marked excesses throughout the district, and in Arizona again on the 10th and 11th. During the remainder of the month the weather was somewhat cooler in the southern half, and in general it was warmer than normal in the northern half of the district, except during the last 3 days, which were relatively cool throughout the district. While scattering showers fell near the beginning of the month, the amounts and areas covered were too small to be of practical benefit to the ranges or to increase the discharge of the smaller streams, the flow from which had become inadequate for the needs of irrigation. Range grass remained very short and stock was suffering from the effects of the prolonged dry period. The drought, however, was somewhat relieved in most localities near the close of the month.

TEMPERATURE.

The mean temperature of the 125 stations reporting was 70.7° , or 0.9° above the normal. By subdivisions the means and departures were: Western Wyoming, 59.1° , $+5.6^{\circ}$; western Colorado, 60.5° , $+2.3^{\circ}$; eastern Utah, 66.8° , $+3.5^{\circ}$; western New Mexico, 70.8° , $+0.8^{\circ}$; Arizona, 78.5° , -0.3° . The highest monthly mean was 93.0° at Mohawk Summit, Ariz.; the lowest, 49.2° at Fraser, Colo. The extremes were: 120° at Gila Bend and Mohawk Summit, Ariz., on the 10th, and 20° at Silverton, Colo., on the 22d. In western Wyoming the maximum reached 95° ; in the valleys of western Colorado, 98° ; and in eastern Utah, western New Mexico, southeastern Nevada, and Arizona readings considerably above 100° were noted at many stations.

PRECIPITATION.

The average precipitation for the 170 stations reporting was 0.56 inch, or 0.06 inch above the normal. By watersheds the means and departures were: Green, 0.46 , -0.32 ; Grand, 0.58 , -0.20 ; San Juan, 0.69 , $+0.01$; Little Colorado, 0.53 , $+0.12$; Gila, 0.52 , $+0.13$; Mimbres, 0.99 , $+0.46$; Colorado, proper, 0.51 , $+0.31$. The greatest monthly amount was 4.00 inches at Baker, Utah, while none fell at 7 stations in Arizona and 2 in Nevada. On an average there were 2 days with 0.01 inch or more of precipitation.

Heavy showers over a small area in Paradise Valley, 18 miles north of Phoenix, during the afternoon and evening of June 27, caused the washing out of the large Arizona canal in 21 places in the distance of 1 mile, and caused a rise in the Salt River at Tempe of several feet. Some of the low lands in Paradise Valley, adjacent to Salt River, were badly eroded.

MISCELLANEOUS.

The amount of sunshine was extraordinary: Durango reported 88 per cent of the possible; Grand Junction, 89 per cent; Flagstaff, 92 per cent; Phoenix, 96 per cent; and Yuma, 99 per cent. The relative humidity was 40 per cent or lower.

There were a number of high winds and sandstorms, but the damage was not great.

THE WATER-POWER RESOURCES OF COLORADO, WITH SPECIAL REFERENCE TO STREAM FLOW.

By W. B. FREEMAN, District Engineer, U. S. Geological Survey.

For an intelligent discussion of the conservation of the water resources of Colorado it is quite important to know the amount and value of these resources. In this paper I will attempt to show

first the total run-off or flow of our streams and rivers, and, secondly, the amount of water power which it will be possible to derive from them. The State has been divided into the following drainage basins, which include the streams named and their tributaries in Colorado: The Arkansas River; the South Platte River; the North Platte (Republican); the Rio Grande; the Green River, which embraces the White; the Grand River, including the Dolores and Gunnison; and the San Juan River.

RUN-OFF OF COLORADO STREAMS.

Records of stream flow, extending over periods of from 1 to 20 years, have been obtained on some of the streams in each of the drainage basins outlined above, from which it is impossible to make estimates of the total flow. Some time ago I made a study of this total run-off, with a view to determining the amount of run-off water which actually reached our streams. In this study I made the assumption that natural conditions existed; that is, the conditions which obtained before the settlement of the country and the construction of irrigation and other hydraulic work. Neglecting possible changes which may have been made in the average rate of run-off by cultivation, grazing, and deforestation, the average run-off should be the same now as it was at that time. These figures do not exactly represent the amount of water which would actually leave the State if no water were used, because no allowance has been made for evaporation and other losses. In a great many cases they are very approximate because of the inadequacy of stream measurements. I think, however, they are of considerable value as showing the relative size of our stream systems.

TABLE 1.—*Estimated mean annual run-off of rivers in Colorado.*

Stream system.	Annual run-off.
Arkansas River and tributaries in Colorado.....	1,600,000
Cimarron River and tributaries in southeastern Colorado.....	10,000
Grand River, including Dolores-Gunnison, in Colorado.....	6,500,000
Green River drainage in Colorado.....	2,000,000
North Plate River and tributaries in Colorado.....	600,000
Republican River and tributaries in Colorado.....	30,000
Rio Grande River and tributaries in Colorado.....	1,100,000
San Juan River and tributaries in Colorado.....	2,400,000
South Platte River and tributaries in Colorado.....	1,400,000
Total in Colorado	15,640,000

It will be noted that of this total average of 15,640,000 acre-feet per annum, the eastern slope, with a drainage area of 65,000 square miles, or 63 per cent of the total area of the State, yields but 4,750,000 acre-feet, or 30 per cent of the total; while the western slope, with an area of 38,700 square miles, yields 10,900,000 acre-feet, or 70 per cent of the total. The average rate of run-off for the State is 150 acre-feet per square mile per annum, equivalent to a depth of 3 inches over the entire surface. The rate for the western slope is 280 acre-feet per square mile per annum, equivalent to a depth of $5\frac{1}{2}$ inches; and for the eastern slope it is 73 acre-feet per square mile per annum, or a little over $1\frac{1}{3}$ inch. This large difference between the rates of run-off on the two sides of the Continental Divide is easily accounted for when it is considered that there is very little area on the western slope below an elevation of 6,000 feet, and a great deal of it is between 10,000 and 14,000 feet high, while fully one-half the eastern drainage area is at an elevation of 5,000 feet or less. Moreover, in the high mountains the run-off is usually greater for the western than for the eastern slope.

There is a very large drainage area in eastern Colorado which is practically nonproductive as to run-off, so that the average depth of run-off over the area on the eastern side of the mountains is probably more nearly 2 inches for the portion which is

TABLE 1.—Climatological data for June, 1910. District No. 9, Colorado Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest. Date.	Lowest. Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Wyoming.</i>																		
Daniel.	Uinta.	6,740	11	54.8	+ 4.9	85 27	25	3† 53	0.15	- 0.94	0.15	0.0	1	20	9	1	nw.	J. M. Van Dervort.
Dixon.	Carbon.	6,577	2	59.8		88 20†	26	4 50	0.16		0.10	0.0	3	12	15	3	w.	Chas. Spillman.
Eden.	Sweetwater.	6,083	5	65.4	+ 6.2	95 27	32	4† 46	0.01		0.01	0.0	1	20	6	4	w.	Eden Valley L. and I. Co.
Green River.	do.	7,630																Geo. H. Maxon.
Kendall.	Fremont.	7,167	4	56.4		88 27	21	22 63	0.03		0.02	0.0	2	19	10	1	nw.	Art. Doyle.
Pinedale.	do.	9,232							1.02		0.62	0.0	3	16	12	2	w.	U. S. Forest Service.
Rambler.	Carbon.																	J. C. Fothergill.
<i>Colorado.</i>																		
Ashcroft.	Pitkin.	9,483	8	53.8		79 12†	26	10 47				0.0						Dan McArthur.
Breckenridge.	Summit.	9,536	20	51.0	+ 2.8	77 20	24	10 49	0.36	- 0.70	0.20	0.0	3	0	29	1	nw.	Mrs. J. G. Thompson.
Cascade.	San Juan.	9,000	4						1.08		0.72	0.0	6	21	5	4	e.	San Juan P. and W. Co.
Chromo.	Archuleta.	7,500	4	58.9		87 19	27	9 57	0.36		0.30	0.0	4				sw.	Lawrence Nolan.
Cochetopa.	Saguache.	9,088							0.50		0.36	0.0	4	12	15	3	w.	Bessie McDonough.
Colbran.	Mesa.	8,000	17	65.0		87 19	42	9 37	0.08	- 0.53	0.08	0.0	1	22	7	1	sw.	A. A. Wood.
Columbine.	Routt.	8,766																Mrs. M. A. Caron.
Columbine Ranch.	Delta.	6,925																Geo. W. Wade.
Corona.	Grand.	11,600	3						0.03		0.03	0.0	1	20	5	5	s.	U. S. Weather Bureau.
Crawford (near).	Montrose.	6,600		66.3		85 12†	43	30 34	0.14		0.11	0.0	2	25	4	1		C. W. Roe.
Crested Butte.	Gunnison.	8,887		51.5		78 11†	26	7† 51	0.93		0.50	0.0	3	15	11	4	w.	Charles L. Ross.
De Beque.	Mesa.	4,935																C. M. Paine.
Delta.	Delta.	4,945	19	70.0	+ 2.1	97 19	40	10 52	0.04	- 0.28	0.03	0.0	2	24	2	4	n.	E. M. Getts.
Dillon.	Summit.	8,800	1			81 20†			0.50		0.30	0.0	2	18	10	2		Harry T. Hamilton.
Dolores.	Montezuma.	6,500	1															Geo. R. Simmons, jr.
Durango.	La Plata.	6,534	17	63.6	+ 1.5	88 12	39	17 44	0.72	+ 0.07	0.64	0.0	3	15	14	1	nw.	U. S. Weather Bureau.
Eagle.	Eagle.	5,598	5															J. M. Witteman.
Eureka.	San Juan.	10,000	3	49.2		75 10†	23	9† 50	0.90		0.40	0.0	5	12	9	9	w.	San Juan P. & W. Co.
Fraser.	Grand.			70.6	+ 2.1	98 20	42	6 50	0.84	+ 0.59	0.81	0.0	2	21	7	2	sw.	L. D. C. Gaskill.
Fruita.	Mesa.	4,510	11															J. B. Willsea.
Gladstone.	San Juan.	10,400	3															San Juan P. & W. Co.
Glenwood Springs (near).	Garfield.	5,523	12	64.8	+ 3.6	91 23†	36	11 52	0.27	- 0.41	0.27	0.0	1	29	1	0	w.	E. A. O'Neil.
Grand Junction.	Mesa.	4,608	19	75.4	+ 3.8	98 19	51	10 39	0.25	- 0.09	0.24	0.0	2	22	6	2	sw.	U. S. Weather Bureau.
Grandlake.	Grand.	8,152	2															Mrs. Belle Kaufman.
Grand Valley.	Garfield.	5,059	18	69.0	+ 2.9	96 3	39	7† 51	0.33	- 0.25	0.33	0.0	1	16	12	2	sw.	David Evans.
Gunnison.	Guanison.	7,670	17	56.5	+ 1.6	90 20	25	16 55	0.27	- 0.32	0.15	0.0	3	16	12	2	sw.	Clarence Adams.
Hayden.	Routt.	6,337	1															C. W. Harkness.
Hesperus.	La Plata.	8,870	11															John S. Spear.
Horseshoe.	Montrose.	8,700																L. J. Finch.
Ironton.	Ouray.	10,000	3															P. H. Foley.
Kremmling (near).	Grand.	7,337	2	57.2		85 27	31	10 49	1.18		0.40	0.0	5	15	12	10		H. A. Howe.
Lake City.	Hinsdale.	8,686	5	58.1		82 19	33	10† 45	0.43		0.28	0.0	4	14	15	1	s.	J. F. Maurer.
Lay.	Routt.	6,190	16	61.5	+ 2.3	92 19	24	9 56	0.20	- 0.39	0.16	0.0	2	16	8	6	sw.	A. G. Wallihan.
Leal.	Grand.	8,750																L. J. Wade.
Lujane.	Montrose.	6,620	4	68.4		90 11	46	10† 39	0.11		0.10	0.0	2	20	7	3	sw.	U. S. Reclamation Service.
Mancos.	Montezuma.	6,960	11	62.6	+ 2.5	87 19	35	10 48	0.98	+ 0.17	0.96	0.0	1	20	8	2	sw.	B. M. Kruppanitzky.
Marble.	Gunnison.	7,951	1	56.9		84 19	28	10 47	0.83		0.30	0.0	4	16	12	2	se.	Homer Harrington.
Marshall Pass.	Saguache.	10,846	7															William D. Lillard.
Meeker.	Rio Blanco.	6,182	18	58.6	+ 0.8	80† 19	30† 8†	50† 50†	0.60	- 0.43	0.37	0.0	3	14	15	1	sw.	T. Baker.
Montrose (near).	Montrose.	5,811	21	63.4	- 0.3	90 13	37	10 48	0.21	- 0.11	0.20	0.0	2	26	4	0		R. Butterfield.
Nast.	Pitkin.	7,953																Arthur Hanthorn.
Pagoda.	Routt.	6,500	19	58.7	+ 1.5	88 19	28	9 52	0.40		0.58	0.16	0	3	28	1		Shaw Brothers.
Pagosa Springs.	Archuleta.	7,108	3	58.2		87 12†	27	23 57	1.03		0.75	0.0	3	16	13	1	sw.	E. T. Walker.
Paonia.	Delta.	5,984	15	68.5		93 19	45	7 41	0.05	- 0.37	0.05	0.0	1	19	9	2	sw.	J. M. Underwood.
Parshall.	Grand.																	F. A. Field.
Pitkin.	Gunnison.	9,500	1															Mrs. Maggie Cammann.
Rangely.	Rio Blanco.	5,050	11	68.3	+ 5.2	97 11	38	9 53	0.95	- 0.46	0.95	0.0	1	13	12	5	w.	Mrs. C. P. Hill.
Redcliff.	Eagle.	8,895	15															Dorothea Greiner.
Rico.	Dolores.	8,824	8															Clinton B. Smith.
River Portal.	Montrose.	6,570	4	65.0		89 11†	39	9† 46	0.12		0.04	0.0	3	23	5	2		U. S. Reclamation Service.
Sapinero.	Gunnison.	8,125	8	55.1		80 19	30	17 46	0.34		0.13	0.0	8	20	8	2	w.	W. F. Irving.
Shoshone.	Garfield.	6,110		64.8		81 19	46	17 30	0.27		0.11	0.0	4	13	12	5		Central Colo. Power Co.
Silt.	do.	5,441	13															W. S. Park.
Silverton (1).	San Juan.	9,285	6	53.2		89 24	20	22 61	0.96		0.36	0.0	8	19	11	0	sw.	A. P. Root, jr.
Silverton (near).	do.	9,400	3	50.2		75 12†	26	17 46	0.97		0.48	0.0	3	18	6	6	sw.	San Juan P. & W. Co.
Spruce Lodge.	Grand.	9,600	2															H. J. Wills.
Steamboat Springs.	Tacoma.	6,683	7	56.3		87 19	24	9 58	0.37		0.19	0.0	3	28	0	2		M. E. Houston.
Tacoma.	La Plata.	7,300	3	60.5		85 12†	35	10 46	0.90		0.90	0.0	1	19	6	5		San Juan P. & W. Co.
Terminal Dam.	do.	8,300	3															Do.
Uncompahgre Plateau.	Montrose.	8,400																Martin Easer.
Whitepine.	Gunnison.	9,500	10	51.2			74 10	28 17 42	T.									C. E. Macy.
Yampa.	Routt.	8,000	1						0.38		0.20	0.0	2	9	18	3	w.	Percy A. Hughes.
Baker.	San Juan.	7,560	1															Maude A. Palmer.
Basin.	Grand.	9,500	1															E. H. Wolf.
Castle Dale.	Emery.	5,500	11	67.2		93 14	40	22† 48	0.25		1.40	0.0	2	29	1	0		James Jeffs.
Emery.	do.	6,260	10	62.6		87 26	40	3† 45	0.45		0.45	0.0	1	11	18	5	s.	H. C. Wickman.
Escalante.	Garfield.	5,700	10	65.2		92 11	37	7 47	0.72		0.72	0.0	1	24	0	6		Geo. H. Barney.
Fort Duchesne.	Uinta.	5,000	22	67.1	+ 2.3	97 28†	36	4† 54	0.39	+ 0.12	0.25	0.0	3	21	5	4	s.	B. F. Mudd.
Grayson.	San Juan.	5,750	6						1.25		0.75	0.0	2					Joseph A. Lyman.
Green River.	Emery.	4,080	13	78.7	+ 5.8	105 1	51	5 45	0.33	+ 0.28	0.24	0.0	2	26	4	0	sw.	B. F. Miller.
Hanksville.	Wayne.																	F. G. Weber.
Hite.	Garfield.	3,000	11															John P. Hite.
La Sal.	San Juan.	7,000	10	64.														

TABLE 1.—Climatological data for June, 1910. District No. 9—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Pervailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.							
Utah—Cont'd.																					
Vernal.	Uinta.	5,050	15	67.2	+ 0.7	95	19	36	9	48	0.15	- 0.24	0.15	0.0	1	27	2	1	Joab Collier.	
New Mexico.																					
Alma.	Socorro.	5,500	11	73.4	+ 4.0	104	10	39	17	60	0.09	- 0.35	0.08	0.0	2	15	14	1	s.	M. A. Balke.	
Aragon.	do.	5,856	3	61.2	-	90	8†	30	17	57	0.30	- 0.23	0.48	0.0	3	18	9	10	w.	John R. Milligan.	
Blackrock.		6,500	2	67.0	-	90	1†	40	16†	46	0.62	- 0.62	0.0	0.0	1	20	1	0	sw.	Wm. J. Oliver.	
Bloomfield.		5,500	15	69.9	+ 1.7	100	19	39	9	56	0.07	- 0.30	0.07	0.0	1	13	15	2	sw.	Fred Le Clerc.	
Cambrey.	Luna.	4,215	11	-	-	-	-	-	-	-	-	-	-	-	3	8	2	0	w.	Southern Pacific Co.	
Columbus.	do.	4,054	11	-	-	106	18	61	27	38	2.34	- 0.55	0.42	0.50	0.0	4	18	3	10	sw.	El Paso & Southwest. R.R.
Deming.	do.	4,333	33	78.0	-	105	10	47	17	48	0.43	- 0.15	0.43	0.0	4	20	4	6	w.	Southern Pacific Co.	
Dulce.	Rio Arriba.	6,767	12	62.0	+ 1.9	91	19	31	9†	58	0.44	- 0.01	0.42	0.0	4	16	8	6	sw.	John M. Commons.	
Fort Bayard.	Grant.	6,152	35	68.2	- 3.0	95	19	42	19	52	2.40	+ 1.68	1.10	0.0	4	20	4	6	w.	U. S. Gen'l. Hospital.	
Fort Wingate.																					
Fruitland.	McKinley.	6,997	46	68.8	+ 1.0	89	12	46	10†	38	0.30	- 0.32	0.20	0.0	2	12	11	7	sw.	Cyril James Collyer.	
San Juan.		4,800	17	70.2	+ 1.7	96	12†	37	9	54	0.25	+ 0.11	0.25	0.0	1	20	10	0	w.	Southern Pacific Co.	
Gage.	Luna.	4,486	3	78.2	-	104	19	54	17	46	0.50	- 0.10	0.29	0.0	2	19	10	1	e.	Miss Cozella Clark.	
Gila (near).	Grant.	4,470	11	74.0	- 0.0	106	19	40	17	64	1.10	+ 0.67	1.00	0.0	5	18	10	2	sw.	El Paso & Southwest. R.R.	
Hachita.		4,504	-	-	-	-	-	-	-	-	-	-	-	-	0	4	10	0	nw.	Dr. John Roger Haynes.	
Haynes.	Rio Arriba.	6,600	-	-	-	-	-	-	-	-	-	-	-	-	1	30	0	0	nw.	El Paso & Southwest. R.R.	
Hermanas.	Luna.	4,451	-	-	-	-	-	-	-	-	-	-	-	-	3	19	10	1	sw.	Southern Pacific Co.	
Lordsburg.	Grant.	4,245	10	78.6	- 0.6	103	19	54	16†	42	0.60	+ 0.34	0.48	0.0	3	20	8	2	w.	C. B. Martin.	
Luna (near).		7,300	5	-	-	-	-	-	-	-	-	-	-	-	0	21	9	0	sw.	Chas. Dennis.	
Manuelito.	McKinley.	6,252	5	-	-	-	-	-	-	-	-	-	-	-	0	19	11	0	w.	El Paso & Southwest. R.R.	
Mimbres.	Grant.	5,007	5	-	-	-	-	-	-	-	-	-	-	-	0	1	16	14	0	w.	Richard Wetherill.
Pratt.		4,415	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.	Robert N. Woods.	
Putnam.	San Juan.	6,200	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.	El Paso & Southwest. R.R.	
Redrock.	Grant.	4,150	5	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.	B. A. Candelaria.	
Rodeo.		4,118	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.		
Rosa.	Rio Arriba.	6,000	5	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.		
Arizona.																					
Allaire Ranch.	Cochise.	4,184	14	84.7	+ 2.0	111	10	58	16	45	1.08	+ 0.85	0.92	0.0	3	25	1	4	w.	Thos. Allaire.	
Arizona Canal Dam.	Maricopa.	1,372	15	84.7	+ 2.0	117	10	62	15	52	0.27	+ 0.18	0.27	0.0	1	25	3	2	w.	U. S. Reclamation Service.	
Aztec.	Yuma.	492	12	84.9	- 5.7	117	10	62	15	52	0.00	- 0.02	0.00	0.0	0	28	0	0	w.	Southern Pacific Co.	
Benson.	Cochise.	3,523	28	80.0	- 2.9	105	10	52	16	47	0.39	+ 0.07	0.30	0.0	2	17	6	7	e.	Rev. G. Pritchard.	
Eisbee.		5,500	20	74.6	- 0.6	94	10	58	3	51	0.34	+ 0.24	0.36	0.0	5	23	5	12	se.	A. Johnson & Co.	
Bonita.	Graham.	4,918	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.	Southern Pacific Co.	
Bowie.	Cochise.	3,756	33	82.0	+ 1.9	107	10†	50	3	45	0.35	- 0.20	0.35	0.0	1	17	9	4	sw.	H. E. Kell.	
Buckeye.	Maricopa.	980	17	82.4	+ 1.9	112	10†	54	8†	55	0.02	+ 0.01	0.02	0.0	1	27	3	0	sw.	R. A. Rodgers.	
Canille.	Santa Cruz.	5,225	1	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.	Southern Pacific Co.	
Casa Grande.	Pinal.	1,396	28	86.4	- 2.4	116	10†	53	16	52	0.00	- 0.09	0.09	0.0	0	23	5	12	sw.	E. A. Howard.	
Cave Creek.	Maricopa.	1,529	3	85.5	-	114	1†	53	8	50	0.50	- 0.40	0.0	0.0	2	28	1	1	sw.	Fr. L. Ostermann, O. F. M.	
Chin Lee.	Apache.	6,090	2	70.7	-	98	19	49	8	54	T.	-	T.	0.0	0	20	8	2	sw.	H. R. Chilarson.	
Clarsons Mill.	Graham.	8,000	3	63.2	-	87	10†	36	16	47	0.98	-	0.80	0.0	3	23	6	1	w.	P. Reisinger.	
Clifton.	Graham.	3,584	19	84.9	-	106	18	63	15	38	0.28	-	0.20	0.0	3	26	2	1	sw.	W. M. Clanton.	
Gila.	Cochise.	2,300	10	79.4	+ 1.4	106	10†	51	17†	50	0.42	+ 0.24	0.40	0.0	2	24	5	1	sw.	Southern Pacific Co.	
Cochise.	Yavapai.	4,219	11	73.4	- 5.9	103	9	48	3†	49	0.20	+ 0.03	0.10	0.0	0	25	4	1	c.	M. J. Nolan.	
Columbia.		1,900	11	85.0	+ 2.5	111	10	62	7	49	0.66	- 0.63	0.0	0.0	0	15	0	5	se.	Congress Mine.	
Congress.	Pinal.	3,688	14	82.4	+ 1.0	105	10	60	16	29	0.01	- 0.06	0.01	0.0	1	27	2	1	sw.	El Paso & Southwest. R.R.	
Courtland.	Cochise.	4,543	1	-	-	-	-	-	-	-	-	-	-	-	0	4	8	10	w.	N. Erickson.	
Dos Cabezos.		5,250	2	76.7	-	108	10	45	18	60	1.24	-	0.48	0.0	4	20	7	3	w.	El. F. T. Wright.	
Douglas.		3,930	7	78.5	-	106	10†	49	17	52	1.07	-	0.39	0.0	0	20	7	3	sw.	G. F. Cook.	
Dudleyville.	Pinal.	2,204	-	-	-	-	-	-	-	-	-	-	-	-	0	16	11	3	sw.	El Paso & Southwest. R.R.	
Fairbank.	Cochise.	3,862	1	-	-	-	-	-	-	-	-	-	-	-	0	2	27	3	w.	U. S. Weather Bureau.	
Flagstaff (I).	Coconino.	6,907	18	59.9	+ 0.6	87	10	31	16	50	0.61	+ 0.06	0.56	0.0	2	25	3	2	sw.	Pacific & Eastern R.R.	
Florence.	Pinal.	1,504	11	86.4	+ 2.0	114	1	57	15	48	T.	- 0.01	T.	0.0	0	23	2	5	e.	Post Hospital.	
Fort Apache.	Navajo.	5,200	39	69.1	- 0.3	95	9†	41	17	49	0.26	- 0.28	0.18	0.0	3	24	3	3	sw.	A. F. Duclos.	
Fort Huachuca.	Cochise.	1,100	25	75.9	- 0.4	100	10†	44	3	44	1.35	+ 0.87	1.35	0.0	2	19	11	0	se.	Southern Pacific Co.	
Fort Mohave.		604	39	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	w.	Dr. B. G. Fox.	
Gilabend.	Maricopa.	737	19	87.8	0.0	120	10	57	17	49	T.	- 0.04	T.	0.0	0	27	3	0	w.	Grand Canyon Ry.	
Globe.		3,525	9	80.0	-	107	10	54	16†	45	0.15	-	0.15	0.0	1	26	4	1	sw.	Mrs. M. Butler.	
Grand Canyon.	Coconino.	6,866	7	61.5	-	86	3†	32	16	48	0.48	-	0.40	0.0	2	24	5	1	sw.	T. Larson.	
Greer.	Apache.	9,200	6	-	-	-	-	-	-	-	-	-	-	-	0	2	23	4	3	s.	A. J. Robinson.
Hereford.	Cochise.	4,180	1	-	-	-	-	-	-	-	-	-	-	-	0	1	24	6	0	sw.	El Paso & Southwest. R.R.
Holbrook.	Navajo.	5,069	21	71.8	+ 2.6	100	11	43	6	52	0.41	+ 0.26	0.29	0.0	2	25	5	0	sw.	T. Larson.	
Intake.		2,230	3	-	-	-	-	-	-	-	-	-	-	-	0	1	24	6	0	sw.	A. J. Robinson.
Jerome.	Yavapai.	4,743	13	77.0	+ 0.2	98	10	53	16	30	0.61	+ 0.43	0.61	0.0	1	27	2	1	s.	Dr. L. A. Hawkins.	
Keams Canyon.	Navajo.	6,618	8	66.8	-	92	13	42	9†	45	0.37	-	0.30	0.0	3	13	17	0	sw.	L. R. Ballard.	
Kingman.		3,326	8	76.0	-	107	10	45	16	55	0.15	-	0.15	0.0	3	1	3	1	sw.	J. R. Gooding.	
Lewis Springs.	Cochise.	4,029	1	-	-	-	-	-	-	-	-	-	-	-	0	1	12	0	sw.	El Paso & Southwest. R.R.	
Maricopa.	Pinal.	1,158	33	86.6	- 2.7	115	10	61	16	40	0.14	+ 0.06	0.14	0.0	1	27					

TABLE 1.—*Climatological data for June, 1910. District No. 9—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.
<i>Arizona—Cont'd.</i>																			
Thatcher.....	Graham.....	2,800	7	78.4		105	10†	47	17	55	0.20		0.20	0.0	1	27	2	nw.	Prof. J. H. Larson.
Tombstone.....	Cochise.....	4,550	11	77.2	+ 0.1	98	10†	54	15	36	0.81	+ 0.49	0.55	0.0	3	20	10	0	F. N. Walcott.
Truxton.....	Mohave.....	4,197																E. B. Atkinson.	
Tuba.....	Coconino.....	4,500	12	71.9		98	1	49	9†	44	0.75	+ 0.51	0.50	0.0	2	16	10	4	G. H. Kraus.
Tucson.....	Pima.....	2,390	30	82.9	+ 0.9	100	10	52	18	47	0.12	+ 0.06	0.12	0.0	1	14	14	2	University of Arizona.
Vail.....	do.....	3,421	11	81.0	+ 0.4	108	10	50	16	47	0.08	+ 0.00	0.08	0.0	1	21	8	1	Southern Pacific Co.
Walnut Grove.....	Yavapai.....	3,649	18								0.12	+ 0.09	0.11	0.0	2	25	5	0	J. O. Carter.
Wickenburg.....	Maricopa.....	2,072		70.0	+ 0.5	108	30	50	3	51	0.05	+ 0.03	0.05	0.0	1	27	3	0	Santa Fe, Pres't & Phoenix
Willcox.....	Cochise.....	4,164	28	76.3	- 2.3	104	2†	50	17†	54	0.23	+ 0.01	0.20	0.0	2	14	12	4	Southern Pacific Co.
Williams.....	Coconino.....	6,750	8	65.2	+ 1.7	92	1†	32	16	56	0.38	+ 0.27	0.32	0.0	3	26	2	2	E. J. Nordyke.
Winslow.....	Navajo.....	4,853	5	74.5		103	12	47	10†	53	0.41		0.20	0.0	3	26	0	4	J. F. Bauer.
Yarnell.....	Yavapai.....	4,700	12								0.10	- 0.07	0.10	0.0	1	27	0	3	E. L. Bartholomew.
Yuma.....	Yuma.....	141	29	84.2	- 0.5	115	10	58	14	45	0.00	0.00	0.00	0.0	0	28	2	0	U. S. Weather Bureau.
<i>Nevada.</i>																			
Las Vegas.....	Clark.....			81.7		112	1	40	21	59	0.00		0.00	0.0	0			nw.	Salt Lake Route.
Logan.....	do.....			79.7		111	1	52	15	51	T.		T.	0.0	0	15	9	s.	Ray M. Filcher.

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

Data are from standard instruments not supplied by the U. S. Weather Bureau.

Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

Estimated by observer.

Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for June, 1910. District No. 9, Colorado Valley.*

TABLE 2.—*Daily precipitation for June, 1910. District No. 9—Continued.*

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TABLE 3.—Maximum and minimum temperatures at selected stations, June, 1910. District No. 9, Colorado Valley.

Date.	Wyoming.				Colorado.												Utah.								New Mexico.															
	Daniel.			Green River.	Durango.			Grand Junction.			Gunnison.			Meeker.			Steamboat Springs.			Emery.			Fort Duchesne.			Hite.			Moss.			St. George (Experimental station).			Fort Bayard.			Fort Wingate.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.						
1.	78	40	92	50	87	44	97	58	80	32	81	34	77	77	32	70	41	52	103	55	105	63	85	51	85	60	85	55	85	64	85	60								
2.	65	37	79	49	88	46	95	59	82	30	84	41	74	74	32	70	44	52	62	99	52	94	59	87	50	87	50	87	50	87	56	87	56							
3.	73	25	76	37	86	44	98	59	80	32	77	34	74	74	32	70	40	55	52	94	51	97	56	83	52	83	52	83	52	83	54	83	54							
4.	65	25	79	32	83	43	98	54	78	34	76	34	75	75	26	70	42	56	51	94	51	97	56	83	52	83	52	83	52	83	54	83	54							
5.	74	29	86	41	85	44	93	58	79	32	83	35	79	79	26	70	40	55	52	95	51	97	56	83	52	83	52	83	52	83	54	83	54							
6.	71	43	84	43	81	44	90	58	80	30	81	37	80	80	31	75	45	58	53	94	55	95	54	86	54	86	54	86	54	86	54	86	54							
7.	68	35	82	39	89	40	90	57	82	34	75	37	77	77	31	75	42	58	53	93	56	95	57	86	55	86	55	86	55	86	55	86	55							
8.	58	32	76	37	85	45	87	53	73	36	76	30	77	77	33	75	46	58	53	92	56	96	57	86	55	86	55	86	55	86	55	86	55							
9.	64	30	76	32	83	44	83	54	80	34	74	34	71	71	33	75	49	58	53	91	51	96	48	89	50	89	50	89	50	89	50	89	50							
10.	76	26	83	38	84	40	87	51	77	27	83	33	75	75	25	74	48	58	53	93	51	97	52	89	51	89	51	89	51	89	51	89	51							
11.	84	31	93	47	84	41	92	56	79	29	84	34	74	74	26	72	42	58	53	96	55	97	55	86	55	86	55	86	55	86	55	86	55							
12.	74	42	85	56	85	50	95	64	81	34	84	40	79	79	37	82	41	58	52	95	59	95	55	86	55	86	55	86	55	86	55	86	55							
13.	75	36	83	52	85	46	94	63	83	30	84	41	79	79	35	82	45	58	53	98	53	98	55	86	53	86	53	86	53	86	53	86	53							
14.	69	33	85	50	82	46	91	62	82	26	83	36	84	84	30	85	42	58	53	95	56	96	57	86	53	86	53	86	53	86	53	86	53							
15.	79	34	84	52	80	45	92	62	82	26	83	36	84	84	30	85	43	58	55	95	55	95	51	86	51	86	51	86	51	86	51	86	51							
16.	69	56	78	49	74	44	78	65	65	25	70	40	62	62	44	81	47	58	51	91	53	90	53	84	53	84	53	84	53	84	53	84	53							
17.	70	38	79	44	82	39	89	59	78	34	82	46	75	75	33	82	45	58	54	94	55	96	56	86	54	86	54	86	54	86	54	86	54							
18.	79	35	90	49	87	43	94	63	80	30	84	37	79	79	33	85	47	58	54	92	54	94	55	86	54	86	54	86	54	86	54	86	54							
19.	80	32	92	46	87	44	98	65	84	32	80	30	87	87	32	84	48	58	54	93	54	95	54	86	54	86	54	86	54	86	54	86	54							
20.	79	34	91	50	84	47	96	70	90	35	87	41	86	86	34	82	46	58	54	92	54	97	57	86	54	86	54	86	54	86	54	86	54							
21.	72	38	85	49	86	45	94	65	84	30	83	41	72	72	33	80	46	58	51	91	53	95	53	86	53	86	53	86	53	86	53	86	53							
22.	71	40	86	46	84	44	92	64	82	35	84	34	73	73	31	81	47	58	52	97	56	94	55	86	55	86	55	86	55	86	55	86	55							
23.	70	42	82	47	84	40	93	65	86	34	85	36	73	73	30	82	46	58	52	97	56	94	55	86	55	86	55	86	55	86	55	86	55							
24.	70	30	85	43	85	46	94	63	80	37	81	40	79	79	33	81	45	58	51	98	55	100	57	86	55	86	55	86	55	86	55	86	55							
25.	79	36	88	45	84	46	94	64	82	34	83	31	81	81	40	79	46	58	52	99	62	97	57	86	55	86	55	86	55	86	55	86	55							
26.	84	38	92	49	93	66	80	36	80	39	83	37	87	87	35	85	55	97	45	100	70	107	50	86	44	82	44	82	44	82	44	82	44	82	44					
27.	85	40	95	52	81	48	97	67	79	37	83	41	84	84	36	86	51	97	47	95	69	94	52	86	52	86	52	86	52	86	52	86	52							
28.	76	39	83	57	70	53	79	63	63	37	80	39	79	79	39	70	55	85	57	80	64	86	66	70	52	74	52	74	52	74	52	74	52	74	52					
29.	75	40	82	57	72	49	88	59	75	35	75	50	71	71	41	69	52	75	57	80	58	94	64	84	58	78	48	78	48	78	48	78	48	78	48					
30.	76	40	88	51	82	46	96	54	79	39	74	40	79	79	42	84	56	84	44	89	54	95	56	86	56	86	56	86	56	86	56	86	56							
Mns.	73.6	36.0	84.6	46.3	82.5	44.8	89.7	61.0	80.0	33.0	79.7	37.4	79.2	33.4	78.8	46.5	89.2	45.0	95.1	57.2	96.8	58.8	84.8	51.7	82.6	55.0	84.8	51.7	82.6	55.0	84.8	51.7	82.6	55.0	84.8	51.7	82.6	55.0		

Date.	Arizona.												Utah.												New Mexico.											
	Bisbee.			Flagstaff.			Fort Apache.			Parker.			Phoenix.			Prescott.			St. Michaels.			San Carlos.			Tucson.			Yuma.			Logan, Nev.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
1.	89	67	84	49	94	51	80	45	108	62	106	74	91	65	92	60	105	70	105	72	111	60	85	51	85	51	85	51	85	51	85	51	85	51		
2.	83	64	78	54	87	54	83	44	106	58	101	76	83	63	87	47	99	72	97	73	102	62	86	52	86	52	86	52	86	52						